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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,799	08/13/2001	Kunitoshi Yonekura	FUJX 18.909	8092

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EXAMINER	
HASHEM, LISA	
ART UNIT	**PAPER NUMBER**
2645	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/928,799	YONEKURA, KUNITOSHI	
	Examiner	Art Unit	
	Lisa Hashem	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ ~~Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)~~ Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ ~~Notice of Informal Patent Application (PTO-152)~~
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 5,598,405 by Hirose.

Regarding claim 1, Hirose discloses a phase lock oscillator comprising: an oscillating section having a phase-locked loop including a reactive element, for generating a signal with a predetermined frequency; and a limit discriminating section for varying a reactance of said reactive element when discriminating an instant preceding an instant which is a limit in said phase-locked loop being capable of maintaining its lock state (col. 2, lines 37-47; col. 3, lines 36-47; col. 9, line 25 – col. 10, line 2).

Regarding claim 3, Hirose discloses a communication equipment comprising a transmitting part for transmitting transmission information by using an output signal of a phase lock oscillator which has a phase-locked loop including a reactive element (col. 2, lines 37-47) and whose oscillation frequency varies according to an input signal (col. 3, lines 36-47), wherein said phase lock oscillator inherently comprises: a limit discriminating section or phase comparator for discriminating an instant preceding an instant which is a limit in said phase-locked loop being capable of maintaining its lock state (col. 2, lines 1-13); and a controlling part for starting a processing of varying a reactance of said reactive element at a first instant

succeeding said preceding instant, when said preceding instant is detected by said limit discriminating section, in which said controlling part controls said transmitting part to transmit said transmission information at a higher transmission rate than a transmission rate applied immediately before said preceding instant, the transmission being performed: during a specified period from an instant at which said preceding instant is detected, to said first instant; or after a predetermined time elapses from said first instant (col. 9, line 25 – col. 11, line 10).

Regarding claim 4, the communication equipment according to claim 3, wherein Hirose further discloses said controlling part controls said transmitting part to inherently transmit a signal for notifying an opponent communication equipment of a change in transmission rate before a beginning of said transmission at said higher transmission rate (col. 1, line 19 – col. 2, line 13; col. 3, lines 36-47).

Regarding claim 5, Hirose discloses a communication equipment comprising a receiving part for receiving a reception signal by using an output signal of a phase lock oscillator which has a phase-locked loop including a reactive element (col. 2, lines 37-47) and whose oscillation frequency varies according to an input signal (col. 3, lines 48-65), wherein said phase lock oscillator inherently comprises: a limit discriminating section for discriminating an instant preceding an instant which is a limit in said phase-locked loop being capable of maintaining its lock state (col. 2, lines 1-13); and a controlling part for starting a processing of varying a reactance of said reactive element at a first instant succeeding said preceding instant, when said preceding instant is detected by said limit discriminating section, in which said controlling part controls said receiving part to perform a receiving processing of said reception signal at a higher transmission rate than a transmission rate applied immediately before said preceding instant, the

reception being performed: during a specified period from an instant at which said preceding instant is detected, to said first instant; or after a predetermined time elapses from said first instant (col. 9, lines 25-50; col. 11, line 40 – col. 12, line 64).

Regarding claim 6, the communication equipment according to claim 5, wherein Hirose further discloses a transmitting part for transmitting transmission information by using an output signal of said phase lock oscillator, and wherein said controlling part controls said transmitting part to inherently transmit a signal for notifying an opponent communication equipment of a change in said transmission rate, the transmission being performed during a specified period from an instant at which said preceding instant is detected, to an instant before said first instant (col. 1, line 19 – col. 2, line 13; col. 3, lines 36-47; col. 9, line 25 – col. 11, line 10).

Regarding claim 7, the communication equipment according to claim 3, wherein Hirose further discloses said transmitting part inherently transmits transmission information at a power at the time of said transmission at said higher transmission rate, the power being larger than a power applied at transmission immediately before said preceding instant (col. 10, lines 30-43).

Regarding claim 8, the communication equipment according to claim 4, wherein Hirose further discloses a response receiving section for inherently receiving a response transmitted from a receiving end which receives a notification transmitted from said transmitting part, the response being transmitted in response to the notification, and wherein said controlling part withholds a processing of varying said reactance of said reactive element until an instant at which said response is received (col. 1, line 19 – col. 2, line 13; col. 3, lines 36-47).

Regarding claim 9, the communication equipment according to claim 3, wherein Hirose further discloses said phase lock oscillator has a lock-up time t which is inherently equal to or

shorter than a product of: a difference between a ratio r of maximum to minimum values of a transmission rate applicable to both or one of transmitting and receiving, and `1`; and a length T of a period which is within said specified period and where a transmission rate is set to a value higher than the minimum value (Fig. 2A-2I; col. 9, lines 25-50; col. 9, line 55 – col. 11, line 10).

Regarding claim 11, the communication equipment according to claim 3, wherein Hirose further discloses a ratio r of maximum to minimum values of a transmission rate inherently applicable to both or one of transmitting and receiving is set at a value equal to or larger than a sum of `1` and a ratio of a lock-up time t of said phase lock oscillator to a length T of a period which is within said specified period and where a transmission rate is set to a value higher than the minimum value (Fig. 2A-2I; col. 9, lines 25-50; col. 9, line 55 – col. 11, line 10).

Regarding claim 13, the communication equipment according to claim 3, wherein Hirose further discloses a length T of a period is inherently set to a value equal to or larger than a ratio of a lock-up time t of said phase lock oscillator to a difference between a ratio r of maximum to minimum values of a transmission rate and `1`, the period being a period which is within said specified period and where the transmission rate to be applied to both or one of transmitting and receiving is set at a value higher than the minimum value of the transmission rate (Fig. 2A-2I; col. 9, lines 25-50; col. 9, line 55 – col. 11, line 10).

Regarding claim 15, the communication equipment according to claim 3, wherein Hirose further discloses: said transmission information is inherently transmitted/received via a sequence of multiplexed slots; and said transmission rate is set individually for each slot (col. 9, line 25 – col. 10, line 29).

Regarding claim 17, the communication equipment according to claim 3, wherein Hirose further discloses a signal generated by said phase lock oscillator is inherently used as one of a carrier signal for transmission and a local-frequency signal for generation of the carrier signal (col. 6, lines 1-20).

Regarding claim 19, the communication equipment according to claim 5, wherein Hirose further discloses a signal generated by said phase lock oscillator is inherently used as a local-frequency signal employed for heterodyne detection performed in a receiving process (col. 2, line 48 – col. 3, line 7).

Regarding claims 10, 12, 14, 16, and 18, please see the rejections of the communication equipment in claims 9, 11, 13, 15, and 17, respectively, to reject the communication equipment in claims 10, 12, 14, 16, and 18.

3. Claim 3 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 5,225,793 by Higashiyama et al, hereinafter Higashiyama.

Regarding claim 2, Higashiyama discloses a phase lock oscillator having a voltage controlled oscillator (Fig. 1) (col. 1, lines 5-15) whose oscillation frequency varies according to a control voltage or VCO (Fig. 1, 20) (see Abstract; col. 2, line 61 – col. 3, line 1), wherein said voltage controlled oscillator comprises: a resonator or ceramic resonator (Fig. 1, 4); a limit discriminating section or limiter circuit (Fig. 1, 6) for detecting that said control voltage reaches a predetermined value (col. 4, lines 2-7); and a controlling part or reactance circuit for varying a resonance frequency of said resonator at the time of the detection by said limit discriminating section (col. 1, lines 40-44; col. 1, lines 62-68; col. 3, lines 4-12; col. 3, line 33 – col. 4, line 7).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- U.S. Patent No. 6,549,078 by Sridharan discloses a method and system for directly modulating a voltage controlled oscillator for use in frequency/phase modulated systems
- U.S. Patent No. 4,543,540 by Linder discloses a phase locked loop with limited phase correction when in locked condition

5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for formal communications intended for entry)

Or call:

(703) 306-0377 (for customer service assistance)

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (571) 272-7542. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LH

lh
April 4, 2005

FAN TSANG
SUPERVISORY PATENT EXAMINER
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